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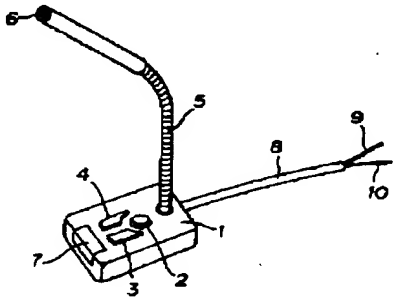
(54) **POINTING DEVICE FOR INFORMATION PROCESSOR**

(57) Abstract:

PROBLEM TO BE SOLVED: To attain instruction input and voice input by the selection and designation of screen-displayed items with high operability without requiring any complicated operation.

SOLUTION: In a pointing device main body (track ball) 1 for an information processor having a microphone 6, a right button switch 4 of the pointing device main body 1 is used also for the on/off switch of the microphone 6. Thus, instruction input by the selection of items and icons or the like screen-displayed on the display of the information processor can be operated, and the microphone 6 can be turned-on only by operating the button switch 4.



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[0019]

[Embodiment of the Invention]

Referring to the accompanying drawings, preferred embodiments of the pointing device for information processing unit in relation to the present invention will be explained in detail.

[0020]

(Embodiment 1)

Fig. 1 illustrates the preferred embodiment 1 of the pointing device for information processing unit of the present invention.

[0021]

This pointing device is a track ball, which is comprising a pointing device body 1 of the desktop fixed position system, ball 2, left button switch 3, right button switch 4 like the ordinary track ball.

[0022]

The pointing device body 1 is provided with the base end portion of a flexible stand tube 5 and a microphone 6 is mounted at the end part of this flexible stand tube 5.

[0023]

When the right button switch 4 is clicked, the microphone 6 becomes the on condition (voice input effective condition) in conjunction with the computer instruction input. Namely, the right button switch 4 is also working as the on/off switch of the microphone 6 having the common function for the computer instruction input and voice input. The left button switch 3 becomes the computer instruction input switch like the switch in the related art.

[0024]

Moreover, the pointing device body 1 is provided with a microphone switch 7 to turn on the microphone 6 independent of the computer instruction input. This switch is never essential but may be omitted.

[0025]

The pointing device body 1 is connected with a composite cable 8 of the pointing device signal line 9 and voice signal line 10 of microphone 6. The pointing device signal line 9 of the composite cable 8 is connected to the mouse input interface of the information processing unit such as a computer or the like not illustrated and the voice signal line 10 is connected to the voice input interface means of the information processing unit not illustrated or to the voice input device.

[0026]

Next, operation of the pointing device for information processing unit in the structure explained above will then be explained.

[0027]

On the occasion of selectively designating items and icons displayed on the display such as CRT or the like of the information processing unit for voice input, the ball 2 is rotated while monitoring the CRT display area to move the cursor on the CRT display area on the items and icons to be selectively displayed. The right button switch 4 is then clicked to input an instruction to the computer.

[0028]

When the right button switch 4 is continuously depressed, the microphone 6 becomes

ON in conjunction with the computer instruction input. Therefore, voice information can be input, without requiring the other switch manipulation and lifting the pointing device, by moving the mouth closely to the microphone 6 by bending the flexible stand tube 5 and then voicing toward the microphone 6.

[0029]

Thereby, the instruction input and voice input by selective designation of display items can be made with good manipulation characteristic without requesting complicated manipulation.

[0030]

When only voice input is requested to be conducted independent of computer instruction input, it is enough to conduct the voicing toward the microphone 6 while the microphone switch 7 is depressed. Moreover, only the computer instruction input is requested, it is enough to click the left button switch 3 like the related art.

[0031]

In this embodiment, the right button switch 4 is defined as the conjunction switch for computer instruction input and voice input, while the left button switch 3 as the computer instruction input switch. However, on the contrary, it is also possible that the left button switch 3 is defined as the conjunction switch for computer instruction input and voice input, while the right button switch 4 as the computer instruction input switch. Moreover, assignment of these button switches may be changed by the system setting of the information processing unit.

[0032]

(Embodiment 2)

Fig. 2 illustrates the embodiment 2 of the pointing device for information processing unit of the present invention. In Fig. 2, a part corresponding to Fig. 1 is designated by the reference numerals like those in Fig. 1 and the same explanation is omitted here.

[0033]

This pointing device is a joy stick, comprising a desktop type pointing device body 1, a manipulation lever 11, a left button switch 3 for computer instruction input and a right button switch 4 functioning for both computer instruction input and voice input.

[0034]

Next, operations of t he pointing device for information processing unit in the structure explained above will then be explained.

[0035]

On the occasion of inputting a vice signal by selectively defining the items and icons displayed on the display area such as CRT or the like of the information processing unit, the manipulation lever 11 is tilted while monitoring the CRT display area to move the cursor on the CRT display area to the items and icons to be selectively displayed. Thereby, the instruction may be input to the computer by clicking the right button switch 4.

[0036]

Even in this embodiment, when the right button switch 4 is depressed continuously, the microphone 6 becomes ON condition in conjunction with the computer instruction input. Therefore, the voice information may be input, without manipulating the other switch and lifting the pointing device, by voicing toward the microphone 6 after moving the mouth to the microphone 6 by bending the flexible stand tube 5.

[0037]

Accordingly, the instruction input and voice input can be made through selective

designation of the display items with good manipulation characteristic without requesting complicated manipulation.

[0038]

When only the voice input is required independent of the computer instruction input, it is enough to voice toward the microphone 6 while depressing the microphone switch 7. When only the computer instruction input is requested, it is enough to click the left button switch 3 in the same manner as the related art.

[0039]

Even in this embodiment, the right button switch 4 is defined as the conjunction switch for both computer instruction input and voice input, while the left button switch 3 s the computer instruction input switch. On the contrary, however, the left button switch 3 is defined as the conjunction switch for both computer instruction input and voice input, while the right button switch 4 as the computer instruction input switch. Moreover, the assignment of button switches may be changed by system setting of the information processing unit.

[0040]

(Embodiment 3)

Fig. 3 illustrates the embodiment 3 of the pointing device for information processing unit of the present invention.

[0041]

In this embodiment, a touch panel 12 as the pointing device for menu selection/item input is attached to the display area 14 of CRT 13 of the information processing unit. The touch panel 12 is a device of the photosensor system utilizing resistance film, in which a plurality of coordinate designating switches 15 are arranged in the form of matrix for menu selection/item input through the touching by fingers to the designated areas under the display of menu/item on the CRT 13.

[0042]

The microphone 16 is of the stand type provided at the end part of the flexible stand tube 18 erected on the base 17. The coordinate designation switch 15 also works as the on/off switch of the microphone 16. While the coordinate designation switch 15 is ON, in other words, while the touch panel 13 is touched with a finger, it is in the ON state (voice input effective condition) in conjunction with the computer instruction input.

[0043]

Moreover, the microphone switch 19 which turns on the microphone 6 independent of the computer instruction input is provided to the base 17.

[0044]

The touch panel 12 and microphone 16 are connected with a composite cable 8 consisting of the pointing device signal line 9 and voice signal line 10 of microphone 6. The pointing device signal line 9 of the composite cable 8 is connected to the mouse input interface means of the information processing unit such as computer not illustrated, while the voice signal line 10 is connected to the voice input interface means of the information processing unit not illustrate or to the voice input device.

[0045]

In this embodiment, an instruction may be input by selectively designating the items and icons displayed on the display area of CRT13 of the information processing unit by touching with a finger on the touch panel 13. When a finger is touched on the touch panel 13, namely while the coordinate designating switch 15 is in the ON condition, the microphone 16 also becomes ON condition in conjunction with the computer instruction input and voice information may be input without requiring the other switch manipulation

by voicing toward the microphone 16 by moving closely the mouth to the microphone 16 through bending of the flexible stand tube 18.

[0046]

Thereby, instruction input and voice input by selective designation of display items can be made with good manipulation property without requiring complicated manipulation.

[0047]

In this embodiment, since the switch for changing over the mode for only instruction input to the information processing unit and the conjunction mode for both instruction input and voice input is not provided, interlocking operation and independent operation of icon and button displayed on the CRT 13 can be previously assigned or interlocking and independent operations can be discriminated by single click and double click of the touch panel 12.

[0048]

(Embodiment 4)

Fig. 4 illustrates the embodiment 4 of the pointing device for information processing unit of the present invention.

[0049]

In this embodiment, a tablet 20 is connected by the composite cable 8. The tablet 20 is of the electromagnetic induction type or electrostatic coupling type, in which a plurality of coordinate designation switches 21 are arranged in the form of matrix and menu selection/item input is performed by touching to the specified area with a finger.

[0050]

In this embodiment, instruction input can be made by menu selection/item input through touching on the tablet 20 with a finger. While the tablet 20 is touched with a finger, namely while the coordinate designation switch 21 is ON condition, the microphone 16 becomes ON condition in conjunction with the computer instruction input and voice information can be input without manipulating the other switch by moving the mouth to the microphone 16 by bending the flexible stand rube 18 and then voicing toward the microphone 16.

[0051]

Thereby, the instruction input by selective designation of display items and voice input can be made with good manipulation property without requiring complicated manipulation.

[0052]

[Effect of the Invention]

As will be understood from above explanation, according to the pointing device for information processing unit of the present invention, since instruction input by selection of items and icons displayed on the display of the information processing unit may be realized and the microphone can be set to the voice input effective condition only by manipulating the button switch of the pointing device, the instruction input by selective designation of display items and voice input can be realized with good manipulation property without requiring complicated manipulation.

[0053]

According to the pointing device for information processing unit of the next present invention, since the microphone is provided at the end part of the stand tube, the microphone may be moved closely to the mouth without lifting the pointing device to improve manipulation flexibility of voice input.

[0054]

According to he pointing device for information processing unit of the next present invention, since the pointing device with microphone is formed of track ball or joy stick as the fixed position type pointing device, position of microphone is never changed by the pointing manipulation and manipulation property of the voice input can be improved.

[0055]

According to the pointing device for information processing unit of the next present invention, the instruction input by selection of items and icons displayed on the display of the information processing unit can be realized and the microphone is in the voice input effective condition only by manipulating the coordinate designation switch of the pointing device, instruction input by the selective designation of display items and voice input can be realized with good manipulation property.

[0056]

According to the pointing device for information processing unit of the next present invention, since the pointing device is structured by a touch panel or tablet, the microphone becomes the voice input effective condition with touching by a finger and thereby the manipulation property for voice input may be improved.

[Brief Explanation of the Drawings]

[Fig. 1]

Perspective view illustrating the embodiment 1 of the pointing device for information processing unit of the present invention.

[Fig. 2]

Perspective view illustrating the embodiment 2 of the pointing device for information processing unit of the present invention.

[Fig. 3]

Perspective view illustrating the embodiment 3 of the pointing device for information processing unit of the present invention.

[Fig. 4]

Perspective view illustrating the embodiment 4 of the pointing device for information processing unit of the present invention.

[Fig. 5]

Perspective view illustrating a mouse with microphone of the related art.

[Description of the Reference Numerals]

1: Pointing device body; 2: Ball; 3: Left button switch; 4: Right button switch; 5: Flexible stand tube; 6: Microphone; 7: Microphone switch; 8: Composite cable; 9: Pointing device signal line; 10: Voice signal line; 11: Manipulation lever; 12: Touch panel;

13: CRT; 14: Display area; 15: Coordinate designation switch; 16: Microphone; 17: Base; 18: Flexible stand tube; 19: Microphone switch; 20: Tablet;

21: Coordinate designating switch.